CLAIMS

What is claimed is:

1. A method of screening compositions that comprise a compound-of-interest, which comprises:

(a) preparing an array of substantially non-aqueous samples, wherein each sample in the array comprises a controlled amount of the compound-of-interest and a liquid excipient, and wherein at least two of the samples differ with respect to the liquid excipient they contain and/or the concentration of the compound-of-interest, and further wherein each sample has a concentration greater than about 1 mg/mL and a viscosity greater than about 100 centipoise;

(b) using a positive displacement pump to dispense less than 250 microliters of an excipient with a viscosity of at least 100 centipoise;

(c) identifying samples in the array wherein at least some of the compound-of-interest dissolved in the liquid excipient; and

(d) ranking the identified samples.

2. The method of claim 1, further comprising:

(a) providing a plurality of liquid excipients and/or miscible combinations of liquid excipients;

(b) preparing an array of substantially non-aqueous samples by contacting, for each sample, a controlled amount of the compound-of-interest with a liquid excipient or a miscible combination of liquid excipients obtained from the plurality, wherein at least two of the samples differ with respect to the liquid excipient or miscible combination of liquid excipients they contain and/or the concentration of the compound-of-interest, and wherein each sample has a concentration greater than about 1 mg/mL and a viscosity greater than about 100 centipoise; and

(c) identifying samples in the array wherein at least some of the compound-of-interest dissolved in the liquid excipient or combination of miscible liquid excipients.

3. The method of claim 2 wherein the samples in the array that comprise decomposed or degraded compound-of-interest are excluded from the identified samples.

4. The method of claim 2 wherein each of the samples is non-aqueous.

5. The method of claim 2 wherein the samples are identified using HPLC, NMR, IR spectroscopy, UV-visible spectroscopy, Raman spectroscopy, visual imaging, or turbidity measurements.

6. The method of claim 2 wherein the identified samples are ranked by the amount of compound-of-interest dissolved.

7. The method of claim 2 wherein the identified samples are ranked by the degree of decomposition or degradation of the compound-of-interest.

8. The method of claim 2 wherein the identified samples are ranked by contacting each of the identified samples with a solution having a pH of from about 9.0 to about 1.0 to provide a set of modified identified samples, and determining how much compound-of-interest is dissolved in each of the modified identified samples.

9. The method of claim 8 wherein the pH is from about 7.5 to about 5.0.

10. The method of claim 9 wherein the pH from about 6.8 to about 5.5.

11. The method of claim 2 wherein the identified samples are ranked by contacting each of the identified samples with a solution having a pH of from about 9.0 to about 1.0 to provide a set of modified identified samples, and determining a characteristic of any undissolved compound-of-interest in each of the modified identified samples.

12. The method of claim 11 wherein the pH is from about 7.5 to about 5.0.

13. The method of claim 12 wherein the pH from about 6.8 to about 5.5.

14. The method of claim 11 wherein the characteristic is average particle size, polymorph, crystal habit, or chemical purity.

15. The method of claim 14 wherein the characteristic is determined using Raman spectroscopy, X-ray spectroscopy, powder X-ray diffraction, differential scanning calorimetry, thermogravimetric analysis, light scattering, microscopy, birefringence measurements, NMR, or HPLC.

16. The method of claim 2 wherein the array comprises at least 94 samples.

17. The method of claim 16 wherein the array comprises at least 380 samples.

18. The method of claim 2 wherein the compound-of-interest is an active pharmaceutical agent.